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REMARKS

This is a full and timely response to the final Official Action mailed March 8, 2007. Reconsideration of the application in light of the following remarks is respectfully requested.

Request for Continued Examination:

Applicant hereby requests Continued Examination for this application and entry and consideration of this amendment consequent thereto.

Claim Status:

Claims 18, 27, 46 and 53 were identified in the final Office Action as containing allowable subject matter. Applicant wishes to thank the Examiner for this finding of allowable subject matter.

The final Office Action also contains a statement of reasons for the allowance or allowability of claims 18, 27, 46 and 53. Applicant agrees with the Examiner's conclusions regarding the patentability of these claims, without necessarily agreeing with or acquiescing in the Examiner's reasoning. In particular, Applicant believes that the indicated claims and the application, as a whole, are allowable because the prior art fails to teach, anticipate or render obvious the invention as claimed, independent of how the claims or claimed subject matter may be paraphrased.

Claims 28-40 were withdrawn from consideration under the imposition of a previous Restriction Requirement and subsequently cancelled without prejudice or disclaimer. No claims are added or cancelled by the present paper. Thus, claims 1-27 and 41-55 are currently pending for further action.

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Prior Art:

Claims 1, 2, 6, 9, 10, 41, 42, 45, 47, 49, 50 and 52 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 4,609,037 to Wheeler et al. ("Wheeler"). For at least the following reasons, this rejection is respectfully traversed.

Claim 1 recites:

A variably insulated system, comprising:  
a heat generating core;  
a heat sink; and  
a heat responsive coupling member configured to selectively cause relative movement of said heat generating core or said heat sink to provide contact between said heat generating core and said heat sink at a predetermined temperature of said heat generating core such that heat from said heat generating core is dissipated by said heat sink when said heat generating core and said heat sink are in contact;  
*wherein said heat responsive coupling member automatically responds to said heat generating core reaching said predetermined temperature and causes said relative movement and contact between said heat generating core and said heat sink.*

The amendment to claim 1 is made merely to render more explicit that which was already recited with regard to the "*heat responsive coupling member.*" (Emphasis added).

Consequently, the amendment to claim 1 is not intended to, or thought to, change or narrow the claim in any degree. Additional support for the amendment to claim 1 can be found in Applicant's originally filed specification at, for example, paragraphs 0026 and 0035.

In contrast to claim 1, Wheeler fails to teach or suggest a heat generating core or a heat responsive coupling member that "automatically responds to said heat generating core reaching said predetermined temperature and causes said relative movement and contact between said heat generating core and said heat sink."

Wheeler teaches an apparatus for heating and cooling articles, especially semiconductor wafers. (Wheeler, col. 1, lines 10-46; col. 2, lines 57-59). Wheeler teaches a wafer chuck or plate (12). (Wheeler, col. 3, line 3). "An electrical connection 32 leads into

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first plate 12 for supplying power for one or more heating elements.” (Wheeler, col. 3, lines 18-20).

Consequently, Wheeler does not teach or suggest the claimed “heat generating core,” but merely teaches a plate containing electrical heating elements. Applicant’s specification defines a “heat generating core” as a device that performs differently, i.e., has different performance characteristics, over a range of temperatures. “The heat generating core (110) illustrated in Fig. 1 may be any heat generating device that functions with increased performance depending on the point of operation of the heat generating device.” (Applicant’s specification, paragraph 0016). Specifically, a heat generating core “operates more efficiently at an elevated operating temperature.” (Applicant’s specification, paragraph 0025). In contrast, as demonstrated above, Wheeler merely teaches electrical heating elements. Consequently, Wheeler does not teach or suggest the claimed system that includes a heat generating core as defined and recited by the Applicant.

Additionally, Wheeler teaches that the wafer chuck or first plate (12) is coupled to a cooling or second plate (14) using vacuums. According to Wheeler, “[v]acuum line 38 connects to second plate 14 for retracting second plate 14 from thermal contact with first plate 12. When vacuum is not applied, a spring presses the plates 12 and 14 together.” (Wheeler, col. 3, lines 32-35).

Thus, Wheeler teaches a system in which the heating plate and cooling plate are normally biased into contact. However, during a heating phase, a vacuum is created that retracts the second plate away from the first plate. (Wheeler, col. 4, lines 64-68). This is entirely different from Applicant’s claimed subject matter.

In the first place, Wheeler does not teach or suggest the claimed “heat responsive coupling member [that] automatically responds to said heat generating core reaching said

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predetermined temperature.” Wheeler does not teach or suggest that the vacuum system described responds to temperature as does the claimed heat responsive coupling member.

Moreover, when the vacuum system is activated, it breaks contact between the heating plate (12) and the cooling plate (14), rather than bringing a heat generating core and heat sink *into* contact. In contrast, claim 1 recites a heat responsive coupling member that, when activated by a predetermined temperature “cause[s] relative movement of said heat generating core or said heat sink to provide contact between said heat generating core and said heat sink.” This is the opposite of what Wheeler teaches.

Thus, Wheeler fails to teach or suggest most of the subject matter recited in claim 1. “A claim is anticipated [under 35 U.S.C. § 102] only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). See M.P.E.P. § 2131. For at least these reasons, the rejection based on Wheeler of claim 1 and its dependent claims should be reconsidered and withdrawn.

Independent claim 41 recites:

A variably insulated system, comprising:  
a heat generating core;  
a means for dissipating heat from said heat generating core; and  
a means for selectively causing relative movement between said heat generating core and means for dissipating heat to provide contact between said means for dissipating heat and said heat generating core at a predetermined temperature of said heat generating core such that heat from said heat generating core is dissipated by said means for dissipating heat when said heat generating core and said means for dissipating heat are in contact;

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*wherein said means for causing relative movement automatically respond to said heat generating core reaching said predetermined temperature and thereupon cause said relative movement and contact between said heat generating core and said means for dissipating heat.*

(Emphasis added).

As demonstrated above, Wheeler fails to teach or suggest the claimed heat generating core or the means for selectively causing relative movement between the heat generating core and heat dissipation means, where the means for causing relative movement automatically respond to the heat generating core reaching a predetermined temperature and thereupon cause relative movement and contact between the heat generating core and the means for dissipating heat. For at least these reasons, the rejection based on Wheeler of claim 41 and its dependent claims should be reconsidered and withdrawn.

Additionally, the various dependent claims of the application recite further subject matter that distinguished over the prior art teachings of Wheeler. Specific, non-exclusive examples are given below.

Claim 45 recites:

a means for biasing configured to provide a bias that physically separates said heat generating core and said means for dissipating heat, wherein said means for selectively causing relative movement overcomes said bias to bring said heat generating core and said means for dissipating heat into contact at said predetermined temperature.

Claim 50 recites similar subject matter and depends from claim 1.

Again, as demonstrated above, this is the exact opposite of what Wheeler teaches. According to Wheeler, "[v]acuum line 38 connects to second plate 14 for retracting second plate 14 from thermal contact with first plate 12. *When vacuum is not applied, a spring presses the plates 12 and 14 together.*" (Wheeler, col. 3, lines 32-35) (emphasis added).

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Thus, Wheeler teaches a system in which the heating plate and cooling plate are normally biased *into contact*. Consequently, Wheeler does not and cannot teach or suggest the means for biasing of claim 45 that physically separate the heat generating core and means for dissipating heat until the bias is overcome, i.e., in response to the system reaching a predetermined temperature. For at least these additional reasons, the rejection of claims 45 and 50 should be reconsidered and withdrawn.

Claim 52 further recites “an evacuated space between said heat generating core and said heat sink that increases the thermal insulation of said heat generating core when said heat generating core and said heat sink are not in contact.” Again, this is the exact opposite of what Wheeler teaches. Wheeler teaches evacuating between the heating and cooling plates *when they are in contact* to increase the pressure of that contact. According to Wheeler,

A vacuum line 40 also connects to second plate 14 clamping together first and second plates 12 and 14. A negative pressure zone, typically about 14 pounds per square inch, created by vacuum line 40 between first and second plates 12 and 14 generates a large force to force an intimate contact between the two plates for high heat transfer. The large contact force is typically around 135 pounds.  
(Wheeler, col. 3, lines 35-42).

Thus, Wheeler does not teach or suggest the claimed evacuated space between a heat generating core and heat sink that are “not in contact” to increase the thermal insulation between the two. For at least this additional reason, the rejection of claim 52 should be reconsidered and withdrawn.

Claims 3 and 4 were rejected as being unpatentable under 35 U.S.C. § 103(a) over the combined teachings of Wheeler and Japanese Patent Pub. No. 03-012998 to Oishi (“Oishi”).

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This rejection is respectfully traversed for at least the same reasons given above with respect to claim 1, and for the following additional reasons.

Claim 3 recites "said heat responsive coupling member comprises a shape memory alloy." Claim 4 recites "wherein said heat responsive coupling member further comprises a spring coupled to said shape memory alloy."

As recited in claim 1, the heat response coupling member, when activated, brings the heat generating core and heat sink *into* contact. As demonstrated above, the vacuum system of Wheeler brings the heating and cooling plates into contact. Thus, the vacuum system taught by Wheeler must be compared to the heat responsive coupling member of claim 1.

Referring to Oishi, it would be untenable to suggest that the support member (3) formed using a shape memory material as taught by Oishi can or should somehow replace or be incorporated in the vacuum system taught by Wheeler. Consequently, the combination of Wheeler and Oishi cannot teach or suggest the claimed heat responsive couple member comprising a shape memory alloy as recited in claims 3 and 4.

"To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)." M.P.E.P. § 2143.03. Accord. M.P.E.P. § 706.02(j). For at least these reasons, the rejection of claims 3 and 4 should be reconsidered and withdrawn.

Claim 51 was rejected under 35 U.S.C. § 103(a) over the teachings of Wheeler taken alone. This rejection is respectfully traversed for at least the same reasons given above with respect to claims 1 and 50.

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Claims 5 and 48 were rejected under 35 U.S.C. § 103(a) over the teachings of Wheeler and U.S. Patent App. Pub. No. 2004/0180247 to Higashiyama et al. ("Higashiyama"). This rejection is respectfully traversed for at least the same reasons given above with respect to claims 1 and 41, and for the following additional reasons.

Claim 5 recites "wherein said coupling member comprises a bimetallic strip." Claim 48 recites similar subject matter.

As recited in claims 1 and 41, the heat responsive coupling member or means for causing relative movement between a heat generating core and heat sink, when activated, bring the heat generating core and heat sink *into* contact. As demonstrated above, the vacuum system of Wheeler brings the heating and cooling plates into contact. Thus, the vacuum system taught by Wheeler must be compared to the heat responsive coupling member or means of the claims.

It would be untenable to suggest that a bimetallic strip taught by Higashiyama can or should somehow replace or be incorporated in the vacuum system taught by Wheeler. Consequently, the combination of Wheeler and Higashiyama cannot teach or suggest the subject matter of claims 5 and 48.

Claims 43 and 54 were rejected under 35 U.S.C. § 103(a) over the teachings of Wheeler and U.S. Patent App. Pub. No. 2001/0023591 to Maeda et al. ("Maeda"). This rejection is respectfully traversed for at least the same reasons given above with respect to claims 1 and 41.

Claims 7, 8, 11, 12, 14, 16, 19, 21, 22, 25, 26 and 44 were rejected under 35 U.S.C. § 103(a) over the teachings of Wheeler and U.S. Patent No. 5,759,278 to Gillett et al.

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("Gillett"). This rejection is respectfully traversed for at least the same reasons given above with respect to claims 1 and 41 and for the following additional reasons.

Claim 11 recites:

An electrochemical system, comprising:  
an electrochemical core;  
a heat sink; and  
a heat responsive coupling member configured to selectively cause relative movement of said electrochemical core or said heat sink to provide contact between said electrochemical core and said heat sink at a predetermined temperature of said electrochemical core such that heat from said electrochemical core is dissipated by said heat sink when said electrochemical core and said heat sink are in contact.

In contrast, Wheeler, as demonstrated above, does not teach or suggest an electrochemical system or an electrochemical core. Wheeler teaches a system for heating items being tested, such as semiconductor wafers. (Wheeler, col. 2, lines 46-56).

Undeterred by this complete inapplicability of Wheeler, the final Office Action proposed to combine a fuel cell system taught by Gillett with the teachings of Wheeler. (Action of 3/8/07, p. 7). This proposal is completely untenable and cannot reasonably support a rejection of claim 11.

The heated testing device of Wheeler has nothing to do with an electrochemical system or an electrochemical core. Combining the fuel cell system of Gillett with the heated testing device of Wheeler makes no sense whatsoever and completely abrogates the purpose and function of the Wheeler device. This is impermissible.

"If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)." M.P.E.P. § 2143.01. "If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose,

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then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)." M.P.E.P. § 2143.01. Consequently, the proposed combination of Wheeler and Gillett is clearly inappropriate and cannot support a rejection of claim 11.

Moreover, as demonstrated above, Wheeler fails to teach or suggest the claimed "a heat responsive coupling member configured to selectively cause relative movement of said electrochemical core or said heat sink *to provide contact* between said electrochemical core and said heat sink at a predetermined temperature." (Emphasis added). This is the opposite of what Wheeler teaches.

For at least these reasons, the rejection of claim 11 and its dependent claims should be reconsidered and withdrawn.

Independent claim 21 recites:

A solid oxide fuel cell system comprising:  
a solid oxide fuel cell;  
a heat sink; and  
a heat responsive coupling member configured to selectively cause relative movement of said heat generating core or said heat sink to provide contact between said solid oxide fuel cell and said heat sink at a predetermined temperature of said solid oxide fuel cell such that heat from said fuel cell is dissipated by said heat sink when said fuel cell and said heat sink are in contact.

As demonstrated above, Wheeler and Gillett cannot reasonably be combined to suggest the solid oxide fuel cell system of claim 21. Moreover, the combination fails to teach or suggest the claimed "heat responsive coupling member configured to selectively cause relative movement of said electrochemical core or said heat sink *to provide contact* between said electrochemical core and said heat sink at a predetermined temperature." (Emphasis added). This is the opposite of what Wheeler teaches.

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For at least these reasons, the rejection of claim 21 and its dependent claims should be reconsidered and withdrawn. The same applies to claims 7, 8, and 44, which recite that the heat generating core comprises a fuel cell for fuel cell system.

Additionally, various dependent claims rejected based on the combination of Wheeler and Gillett recite further subject matter that is not taught or suggested by the proposed, if untenable, combination of prior art references. Non-exclusive examples follow.

Claim 12 recites "wherein said predetermined temperature comprises an operating temperature of said electrochemical core." Claim 22 recites similar subject matter. There is absolutely not teaching or suggest in the cited prior art that the operating temperature of an electrochemical core or fuel cell is used as the trigger for bringing that core and a heat sink or heat dissipating means into contact. For at least this additional reason, the rejection of claims 12 and 22 should be reconsidered and withdrawn.

Claim 14 recites "a biasing member configured to provide a bias physically separating said heat generating core and said heat sink, wherein said heat responsive coupling member overcomes said bias to bring said heat generating core and said heat sink into contact." Claim 26 recites similar subject matter. As demonstrated above, the cited prior art fails to teach or suggest this subject matter. Consequently, the rejection of these claims should be reconsidered and withdrawn.

Claim 19 recites "an evacuated space between said heat generating core and said heat sink that increases the thermal insulation of said heat generating core when said heat

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generating core and said heat sink are not in contact.” As demonstrated above, the cited prior art fails to teach or suggest this subject matter. Consequently, the rejection of this claim should be reconsidered and withdrawn.

Claims 13 and 23 were rejected under 35 U.S.C. § 103(a) over the combined teachings of Wheeler, Gillett and Oishi. This rejection is respectfully traversed for at least the same reasons given above with regard to claims 11 and 21, including the unreasonableness of the proposed combination of teachings from Wheeler and Gillett. This rejection is also traversed for the same reasons given above with respect to the proposed combination of teachings from Wheeler and Oishi with respect to claims 3 and 4. For any and all of these reasons, the rejection of claims 13 and 23 should be reconsidered and withdrawn.

Claims 15 and 24 were rejected under 35 U.S.C. § 103(a) over the combined teachings of Wheeler, Gillett and Higashiyama. This rejection is respectfully traversed for at least the same reasons given above with regard to claims 11 and 21, including the unreasonableness of the proposed combination of teachings from Wheeler and Gillett. This rejection is also traversed for the same reasons given above with respect to the proposed combination of teachings from Wheeler and Higashiyama with respect to claims 5 and 48. For any and all of these reasons, the rejection of claims 15 and 24 should be reconsidered and withdrawn.

Claims 17 and 55 were rejected under 35 U.S.C. § 103(a) over the combined teachings of Wheeler, Gillett and U.S. Patent No. 6,296,032 to Louie et al. (“Louie”). This rejection is respectfully traversed for at least the same reasons given above with regard to claims 11 and

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21, including the unreasonableness of the proposed combination of teachings from Wheeler and Gillett.

Claim 20 was rejected under 35 U.S.C. § 103(a) over the combined teachings of Wheeler, Gillett and Maeda. This rejection is respectfully traversed for at least the same reasons given above with regard to claim 11, including the unreasonableness of the proposed combination of teachings from Wheeler and Gillett.

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Conclusion:

For the foregoing reasons, the present application is thought to be clearly in condition for allowance. Accordingly, favorable reconsideration of the application in light of these remarks is courteously solicited. If the Examiner has any comments or suggestions which could place this application in even better form, the Examiner is requested to telephone the undersigned attorney at the number listed below.

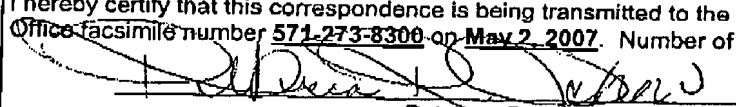
Respectfully submitted,

DATE: May 2, 2007

  
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